

CLAIMS

What is claimed is:

1 1. A method comprising:
2 receiving a first code segment, the first code segment having a set of instances of a
3 parallel construct, each of the set of instances of the parallel construct
4 comprised of a task; and
5 translating the first code segment to a second code segment, the second code
6 segment, when being executed to perform operations comprising:
7 allocating a shared value, the shared value to indicate a most current one of
8 the set of instances encountered by one of a team of threads,
9 allocating a private value for each of the team of threads, the private value
10 to indicate one of the set of instances encountered by the private
11 value's corresponding thread of the team of threads,
12 maintaining the shared value with the team of threads, and
13 maintaining the private value of each of the team of threads with the
14 private value's corresponding thread of the team of threads.

1 2. The method of claim 1 wherein the thread undertakes the task of one of the set of
2 instances if the shared value and the private value indicate a same one of the set of
3 instances.

1 3. The method of claim 1 wherein maintaining the shared value comprises
2 incrementing the shared value when one of the team of threads undertakes the task of one
3 of the set of instances.

1 4. The method of claim 1 wherein maintaining the private value comprises
2 incrementing the private value when the private value's corresponding thread of the team
3 of threads encounters one of the set of instances.

1 5. The method of claim 1 further comprising the thread maintaining a second private
 2 value, the second private value being a boundary for accessing the shared value.

1 6. A method comprising:
 2 receiving a first code segment, the first code segment having a set of instances of a
 3 parallel construct, each of the set of instances being associated with a task;
 4 and
 5 for each of the set of instances, generating a second code segment, which when
 6 executed, cause a first thread to perform operations comprising:
 7 encountering one of the set of instances,
 8 determining if the task of the one of the set of instances has been
 9 undertaken by a second thread,
 10 upon determining the task has not been undertaken by the second thread,
 11 undertaking the task and indicating with a shared value the
 12 undertaking of the task,
 13 indicating with a first private value of the first thread the one of the set of
 14 instances, and
 15 maintaining a second private value of the first thread, the second private
 16 value being a boundary for accessing the shared value.

1 7. The method of claim 6 wherein determining if the task of the one of the set of
 2 instances has been undertaken by the second thread comprises the first thread comparing
 3 the shared value and its first private value.

1 8. The method of claim 6 wherein determining if the task of the one of the set of
 2 instances has been undertaken by the second thread comprises the first thread comparing
 3 the first private value of the first thread and the second private value of the first thread.

1 16. A machine-readable medium that provides instructions, which when executed by a
2 set of one or more processors, cause said set of processors to perform operations
3 comprising:

4 receiving a first code segment, the first code segment having a set of instances of a
5 parallel construct, each of the set of instances of the parallel construct
6 comprised of a task; and

7 translating the first code segment to a second code segment, the second code
8 segment, when being executed to perform operations comprising:
9 allocating a shared value, the shared value to indicate a most current one of
10 the set of instances encountered by one of a team of threads,
11 allocating a private value for each of the team of threads, the private value
12 to indicate one of the set of instances encountered by the private
13 value's corresponding thread of the team of threads,
14 maintaining the shared value with the team of threads, and
15 maintaining the private value of each of the team of threads with the
16 private value's corresponding thread of the team of threads.

1 17. The machine-readable medium of claim 16 wherein the thread undertakes the task
2 of one of the set of instances if the shared value and the private value indicate a same one
3 of the set of instances.

1 18. The machine-readable medium of claim 16 wherein maintaining the shared value
2 comprises incrementing the shared value when one of the team of threads undertakes the
3 task of one of the set of instances.

1 19. The machine-readable medium of claim 16 wherein maintaining the private value
2 comprises incrementing the private value when the private value's corresponding thread
3 of the team of threads encounters one of the set of instances.

